

MICRO-MAGNETIC LATCHING SWITCH WITH RELAXED
PERMANENT MAGNET ALIGNMENT REQUIREMENTS

ABSTRACT OF THE DISCLOSURE

A micro magnetic latching device. The device comprises a substrate having a moveable element supported thereon. The moveable element (cantilever) has a long axis and a magnetic material. The device also has first and second magnets that produce a first magnetic field, which induces a magnetization in the magnetic material. The magnetization is characterized by a magnetization vector pointing in a direction along the long axis of the moveable element, wherein the first magnetic field is approximately perpendicular to a major central portion of the long axis. The device also has a coil that produces a second magnetic field to switch the movable element between two stable states, wherein only temporary application of the second magnetic field is required to change direction of the magnetization vector thereby causing the movable element to switch between the two stable states.

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